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Effectiveness of Read-Answer-Discuss-Explain-Create Learning Model in Improving Creative Problem Solving Ability of Elementary School Students

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ABSTRACT

This study examined how the RADEC model aligns with psychological principles and cognitive processes to enhance creative thinking skills. The method used in this study was quasi-experiment with non-equivalent pretest post-test control group design. A total of 48 students as samples of this study were grouped into experimental groups and control groups. The data were collected through test instruments in the form of case study questions to assess students' creative thinking skills. The data were analyzed through descriptive statistical test and independent-sample t test with the help of SPSS version 29 for windows. The findings of this study reveal that the RADEC learning model effectively strengthens students' creative thinking skills. The steps of this model help foster innovative creative thinking in students' problem-solving. The implications of this study highlight the RADEC model as an effective framework for fostering creativity in education. It supports curriculum developers and educators in designing learning processes that nurture students' innovative and critical thinking skills, essential for 21st-century challenges. The model's ability to adapt to different learning styles makes it relevant in various educational settings and helps develop real-world problem-solving skills.

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1. INTRODUCTION

Indonesian students' creative thinking in problem-solving still shows a relatively low level (Hidajat, 2023). This is reflected in the tendency of students to use rigid approaches and stick to conventional methods when faced with various challenges (Norris *et al.,* 2023). Many students struggle to develop innovative solutions or look at problems differently. The ability to think outside the box and come up with original ideas still needs to be improved (Avcı & Yildiz Durak, 2023; Van Hooijdonk *et al.,* 2024).

Several factors such as an education system that emphasizes memorization over conceptual understanding, a lack of encouragement to explore alternative solutions, and a lack of opportunities for students to solve complex and open-ended problems, contribute to this low level of creative thinking (Willemsen *et al.,* 2023). As a result, many Indonesian students are poorly prepared to face real-world challenges that often require creative and innovative solutions (Affandy *et al.,* 2024; Hidayat *et al.,* 2024; Nufus *et al.,* 2024).

Creativity has emerged as a critical area of focus for nations worldwide, recognizing its role as a driving force for innovation and economic competitiveness in the 21st century. In response, many countries are actively reforming their education systems and cultivating work environments that prioritize the development of creative thinking and foster a culture of innovation across all sectors (Dilekçi & Karatay, 2023; Yang *et al.*, 2022).

In a rapidly changing world, the ability to think outside the box is becoming increasingly valuable. Creative thinking encourages children to take intellectual risks, explore new possibilities, and develop confidence in facing challenges (Rago & Gibson, 2021).

Creativity is considered vital in addressing real-world problems and is increasingly regarded as the driving force behind societal progress (Li *et al.,* 2024). To enable children to adapt to unknown problems in the future, schools need to cultivate students' creative abilities, preferably from an early age (Saleem *et al.,* 2024). Creative problem solving is a form of everyday creative ability where students use subject knowledge and creative skills to solve everyday problems (Khalid *et al.,* 2020; Stolz *et al.,* 2022).

Creative thinking is essential in solving problems or generating new ideas (Hadar & Tirosh, 2019). This process involves identifying the latest regular properties of objects and their transformations. Creative thinking can also enhance students' learning from their actions and experiences in new and personally meaningful ways (Cheng, 2018). In addition, creative thinking as a cognitive skill is essential for students to understand that they have processed the outcome of a new idea or solution (Hsia *et al.,* 2021).

Students' creative thinking ability is strongly influenced by various factors such as the characteristics of the tasks given, learning approaches that emphasize memorization rather than conceptual understanding, lack of encouragement to explore various alternative solutions, and limited opportunities for students to tackle complex and open-ended problems (Willemsen *et al.,* 2023).

In this context, the RADEC learning model is considered a promising solution. This model focuses on self-directed learning in solving non-routine and unstructured problems or questions (Setiawan *et al.,* 2020; Sopandi, 2017b). RADEC learning encourages students to read critically, answer challenging questions, discuss with their peers, explain their thinking, and finally create creative solutions. This approach not only stimulates creativity, but also develops higher-order thinking skills, analytical ability, and independence in learning (Handayani *et al.,* 2019; Lestari *et al.*, 2022; Setiawan *et al.*, 2019).

Some previous studies examined the implementation of the RADEC learning model in improving students' thinking skills such as research on critical thinking skills (Yulianti *et al.*,

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2022), improving higher order thinking skills (Agustin *et al.*, 2021), students' creative thinking skills in learning using the RADEC model (Nurnaningsih *et al.,* 2023), development of students' creative thinking in mathematics learning through RADEC model (Indarwati *et al.,* 2023).

From some of these studies, there is no research that focuses on students' creative thinking skills in problem solving in learning using the RADEC learning model, so this research has an important role to fill the gap of research that has not been done. The purpose of this study is to explore and analyze the effectiveness of the RADEC learning model on improving students' creative thinking skills in problem solving.

2. METHODS

A quantitative approach was used in this study. The method used is the experimental method because this research tests the impact of the applied learning (Creswell & Creswell, 2018). The type of design used in this research is Non-equivalent pretest post-test control group design.

A total of 48 grade 5 elementary school students (aged 11th—12th) were selected as the sample for this study and grouped into experimental and control groups. A total of 25 students were in the experimental group, while 23 students were included in the control group. The sample in this study was taken through purposive sampling which means that the selection of samples was not done randomly, but was chosen based on certain considerations to facilitate this research.

This research data was collected through a test instrument in the form of case study questions. The indicators of students' creative thinking skills measured in this study include originality, completeness, and practicality. A total of 4 questions regarding the case study were given to students to test students' creative thinking skills in problem solving. This was done to obtain an overview of students' creative thinking problem solving skills in science learning.

Data analysis of this study was conducted through descriptive statistical tests and inferential statistical tests using the independent sample t test with the help of SPSS version 29 for windows to see the difference in students' initial creative thinking abilities before being given treatment with students' creative thinking problem solving abilities after getting learning using the RADEC learning model.

3. RESULTS AND DISCUSSION

3.1. Students' Creative Thinking Ability in Science Learning

The analysis of data on students' creative thinking skills through the implementation of the RADEC learning model in science education reveals a substantial improvement in their performance. This finding underscores the effectiveness of the RADEC model in enhancing students' ability to think creatively, particularly in generating innovative ideas, analyzing problems, and proposing novel solutions. The improvement is evident in the comparison of pretest and post-test scores, showing a marked increase in students' creative thinking abilities after engaging in the structured RADEC learning process.

To provide a clearer understanding of the results, **Table 1** presents the output of the data analysis using descriptive statistical tests. The table illustrates key metrics such as mean scores, standard deviations, and score distributions, offering a comprehensive view of the overall improvement in students' creative thinking skills.

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Table 1. Students' Creative Thinking Ability

		Pretest Experiment	Post-test Experiment	Pretest Control	Post-test Control
N	Valid	25	25	23	23
	Missing	25	25	23	23
Mean		49	87	48	71
Median		48	85	52	75
Mode		43	85	47	75
Std. Deviation		13.32254	5.47723	10.40200	6.97228
Variance		177.490	30.000	108.202	48.613
Minimum		27	75	27	55
Maximum		78	97	72	87
Sum		1234.00	2165.00	1121.00	1642.00

a. Multiple modes exist. The smallest value is shown

From **Table 1**, it is known that the pretest average score of students' creative thinking skills in the experimental group is 49, while the post-test average score is 87. The average difference in the experimental group is 38. While in the control group the pretest average score is 48, while the post-test average score is 71. This shows that the increase in the acquisition of the average score of creative thinking skills in the experimental group is higher than the increase in the acquisition of the average score in the control group.

The following authors present the output figure of the difference in the acquisition of students' creative thinking ability scores between the experimental group and the control group in terms of each indicator, namely in **Figure 1** as follows.

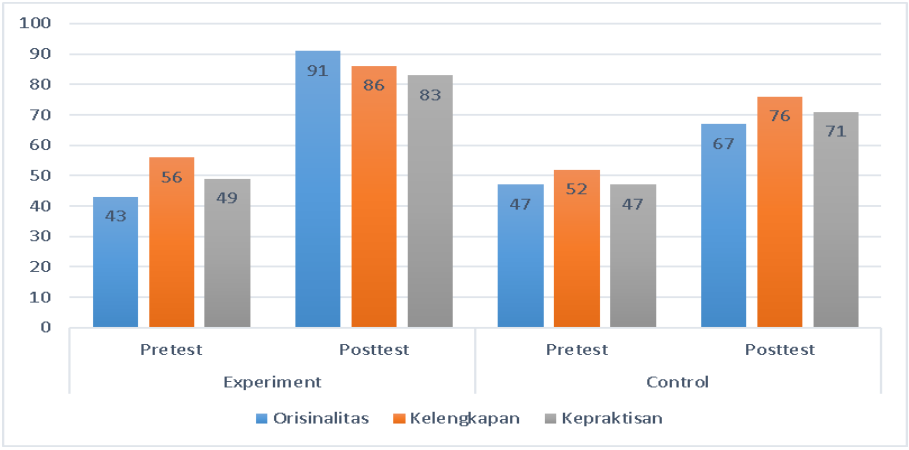

Figure 1. Students' Creative Thinking Abilty in Review of Each Indicator

From **Figure 1**, it is known that the overall creative thinking ability of students in the experimental group and control group has increased seen from each indicator. Specifically in the experimental group, the originality indicator experienced the highest score increase among other indicators. While in the control group, the completeness indicator got the highest score among other indicators.

To describe the difference between the initial ability and the final ability of students after learning using the RADEC learning model can be seen from the results of the independent sample t-test. The following authors present the output of data analysis results in **Table 2** as follows.

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Table 2. Results of Independent Samples Test Analysis of Creative Thinking Ability Pretest Score

	Levene's Test for Equality of Variances		t-test for Equality of Means							
					Significance		Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
	F	Sig.	t	df	One-Sided p	Two-Sided p			Lower	Upper
Equal variances assumed	2.194	.145	.179	46	.429	.859	.62087	3.47135	-6.36659	7.60833
Equal variances not assumed			.181	44.858	.429	.857	.62087	3.43570	-6.29959	7.54133

Based on the results of the independent samples t-test analysis on the pretest scores of students' creative thinking skills presented in **Table 2**, a significance value (Sig. 2-Tailed) of 0.859 was obtained. This value is greater than 0.05, which indicates that there is no significant difference in the pretest score of creative thinking ability between the experimental group that will use the RADEC learning model and the control group that uses the conventional learning model. In addition, the Levene test results showed a significance value of 0.145, which is greater than 0.05. This indicates that the variance of the two groups can be considered homogeneous. Therefore, the assumption of equality of variances was met, and the analysis continued using the t-test results on the line "Equal variances assumed."

To determine the effect of the treatment given by applying the RADEC learning model, the researcher conducted a two-tailed t-test between the experimental and control groups. The results of the test are presented in **Table 3**, which shows the comparison of the average scores before and after the application of the RADEC model in both groups.

Table 3. Results of Independent Samples Test Analysis of Post-test Score of Creative Thinking Ability

	Levene's Test for Equality of Variances		t-test for Equality of Means							
					Significance		Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
	F	Sig.	t	df	One-Sided p	Two-Sided p			Lower	Upper
Equal variances assumed	.509	.479	8.440	46	<,001	<,001	15.20870	1.80207	11.58132	18.83607
Equal variances not assumed			8.355	41.739	<,001	<,001	15.20870	1.82033	11.53445	18.88295

Based on **Table 3**, the results of the independent samples test analysis show that the variances of the two groups are homogeneous (F = 0.509; p = 0.479). The t-test resulted in t = 8.440 (df = 46) with p < 0.001, indicating a significant difference in the creative thinking

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ability post-test scores. The mean difference amounted to 15.20870 (SE = 1.80207) with a 95% confidence interval between 11.58132 to 18.83607. This finding proves that the RADEC model has a significant impact on students' creative thinking skills.

In an effort to analyze the effectiveness of the application of the RADEC model on students' creative thinking skills, researchers calculated the effect size as presented in **Table 4**. The results of this effect size analysis will provide an overview of how much influence the RADEC model has in improving students' creative thinking skills in the experimental group compared to the control group.

Table 4. Independent Samples Effect Sizes

				95% Confidence Interval	
		Standardizer[a]	**Point Estimate**	**Lower**	**Upper**
Nilai_Post-test	Cohen's d	6.23712	2.438	1.677	3.184
	Hedges' correction	6.34117	2.398	1.650	3.132
	Glass's delta	6.97228	2.181	1.315	3.025

From **Table 4**. it is known that the point estimate on Cohen's d criteria is 2.438. Based on the effect size criteria, it is included in the strong category. This shows that the RADEC learning model has a greater effect than the conventional model applied in the control group, which means that this study found that the RADEC learning model is more effective in improving creative thinking problem solving skills in science learning.

In the context of this research, the RADEC learning model is considered as one of the effective solutions to improve creative thinking problem-solving skills of grade 4 students in science learning. The RADEC model focuses on self-directed learning, where students are challenged to solve unusual problems or questions that require students to think from low order thinking skills to higher order thinking skills (Handayani *et al.*, 2019; Satria & Sopandi, 2019; Sopandi, 2017a).

This is in line with previous studies that have shown that the RADEC learning model can effectively stimulate creativity and develop higher order thinking skills, analytical ability, and independence in learning (Nurnaningsih *et al.,* 2023; Setiawan *et al.*, 2019). In addition, several studies have examined the application of the RADEC model in improving various student thinking skills, such as critical thinking skills (Indarwati *et al.*, 2023; Lestari *et al.,* 2022; Setiawan *et al.*, 2020), and students' creative thinking skills in learning (Nurnaningsih *et al.,* 2023; Sariaman *et al.*, 2021).

Through the RADEC learning model, students are invited to read critically, answer challenging questions, discuss with their peers, explain their thinking, and ultimately create creative solutions. The learning process that encourages students to actively build their own knowledge through the learning process will be more meaningful and can stimulate students' creativity and develop higher order thinking skills (Nuryani *et al.*, 2019; Pande & Bharathi, 2020; Soare, 2015).

The RADEC learning model emphasizes engaging students in generating creative solutions, fostering a hands-on and innovative learning experience. This process not only strengthens cognitive abilities but also plays a crucial role in enhancing students' creative thinking skills (Bulut Ates & Aktamis, 2024; Herlina *et al.,* 2023; Tromp & Baer, 2022).

This study has limitations, namely the main limitation in this study is the limited sample size. A small sample may limit the generalization of the study results to a larger population. Therefore, the results of the study cannot accurately reflect the true variation in the student population. Furthermore, internal factors such as motivation, emotional intelligence, and individual needs of students may be variables that are not fully controlled.

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Based on the shortcomings and limitations of the research described above, the implications of this research are: First, the results of this study contribute to the development of learning theory by providing insight into the effect of the RADEC learning model on students' creative thinking skills. The findings can be used to enrich and expand the understanding of the mechanisms and learning processes that can improve students' creative thinking skills. Second, the results of this study can contribute to the theory of thinking ability by providing empirical evidence of the impact of such learning on the development of students' creative thinking ability.

4. CONCLUSION

This study concludes that the RADEC learning model is proven to be effective in improving the creative thinking problem-solving skills of grade 5 elementary school students in science learning. Through the stages of the RADEC model, students are trained to read and understand information, answer questions, discuss, explain ideas, and create creative solutions to problems faced. This is in line with Vygotsky's learning theory of the zone of proximal development, where social interaction and scaffolding from teachers or peers help students reach higher levels of ability.

The implication of this research is the need to apply the RADEC learning model in science learning in elementary schools, especially to develop students' creative problem-solving thinking skills. Teachers can utilize this model as an effective alternative teaching strategy. In addition, further research can be conducted to explore the effectiveness of the RADEC model in other learning contexts or at different levels of education.

5. REFERENCES

Affandy, H., Sunarno, W., Suryana, R., & Harjana. (2024). Integrating creative pedagogy into problem-based learning: The effects on higher order thinking skills in science education. *Thinking Skills and Creativity*, *53*, 101575.

Agustin, M., Pratama, Y. A., Sopandi, W., & Rosidah, I. (2021). Pengaruh model pembelajaran RADEC terhadap keterampilan berpikir tingkat tinggi mahasiswa PGSD. *Jurnal Cakrawala Pendas*, *7*(1).

Avcı, Ü., & Yildiz Durak, H. (2023). Innovative thinking skills and creative thinking dispositions in learning environments: Antecedents and consequences. *Thinking Skills and Creativity*, *47*, 101225.

Bulut Ates, C., & Aktamis, H. (2024). Investigating the effects of creative educational modules blended with Cognitive Research Trust (CoRT) techniques and Problem Based Learning (PBL) on students' scientific creativity skills and perceptions in science education. *Thinking Skills and Creativity*, *51*, 101471.

Cheng, V. M. (2016). Understanding and enhancing personal transfer of creative learning. Thinking Skills and Creativity, 22, 58-73.

Creswell, J. W., & Creswell, J. D. (2018). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* (Fifth Edit). SAGE Publications, Inc.

DOI: http://dx.doi.org/10.17509/xxxx.xxxx
p- ISSN 2085-1243 e- ISSN 2579-5457

Dilekçi, A., & Karatay, H. (2023). The effects of the 21st century skills curriculum on the development of students' creative thinking skills. *Thinking Skills and Creativity*, *47*, 101229.

Hadar, L. L., & Tirosh, M. (2019). Creative thinking in mathematics curriculum: An analytic framework. *Thinking Skills and Creativity*, *33*, 100585.

Handayani, H., Sopandi, W., Syaodih, E., Suhendra, I., & Hermita, N. (2019). RADEC: An alternative learning of higher order thinking skills (hots) students of elementary school on water cycle. *Journal of Physics: Conference Series*, *1351*(1).

Herlina, A., Nirmala, S. D., & Rahayu, U. (2023). Creative thinking and collaborative ability of elementary students with the implementation of the stem integrated project-based learning model. *EduHumaniora | Jurnal Pendidikan Dasar Kampus Cibiru*, *15*(1), 39–50.

Hidajat, F. A. (2023). A comparison between problem-based conventional learning and creative problem-based learning on self-regulation skills: Experimental study. *Heliyon*, *9*(9), e19512.

Hidayat, L. E., Basthomi, Y., & Afrilyasanti, R. (2024). Exploring secondary school teachers' creativity in differentiated instruction (DI) practices across Indonesian EFL classrooms. *Thinking Skills and Creativity*, *53*, 101620.

Hsia, L., Lin, Y., & Hwang, G. (2021). A creative problem solving-based flipped learning strategy for promoting students' performing creativity, skills and tendencies of creative thinking and collaboration. *British Journal of Educational Technology*, *52*(4), 1771–1787.

Indarwati, Nuryam, A., & Asfar, A. M. I. T. (2023). Pengaruh model pembelajaran read, answer, discuss, explain, and create (radec) terhadap kemampuan berpikir kreatif matematis siswa kelas XI IPS MA As-Adiyah Uloe Kabupaten Bone. *De Fermat: Jurnal Pendidikan* Matematika, 6(2), 92–103.

Khalid, M., Saad, S., Hamid, S. R. A., Abdullah, M. R., Ibrahim, H., & Shahrill, M. (2020). Enhancing creativity and problem solving skills through creative problem solving in teaching mathematics. Creativity Studies, 13(2), 270-291.

Lestari, H., Ali, M., Sopandi, W., Wulan, A. R., & Rahmawati, I. (2022). The impact of the radec learning model oriented esd on students' sustainability consciousness in elementary school. *Pegem Egitim ve Ogretim Dergisi*, *12*(2), 113–122.

Li, G., Chu, R., & Tang, T. (2024). Creativity self assessments in design education: a systematic review. *Thinking Skills and Creativity*, *52*, 101494.

Norris, C. M., Taylor, T. A., & Lummis, G. W. (2023). Fostering collaboration and creative thinking through extra-curricular challenges with primary and secondary students. *Thinking Skills and Creativity*, *48*, 101296.

DOI: http://dx.doi.org/10. 17509/xxxx.xxxx
p- ISSN 2085-1243 e- ISSN 2579-5457

Nufus, H., Muhandaz, R., Hasanuddin, Nurdin, E., Ariawan, R., Fineldi, R. J., Hayati, I. R., & Situmorang, D. D. B. (2024). Analyzing the students' mathematical creative thinking ability in terms of self-regulated learning: How do we find what we are looking for? *Heliyon*, *10*(3), e24871.

Nurnaningsih, N., Hanum, C. B., Sopandi, W., & Sujana, A. (2023). Keterampilan berpikir kritis dan berpikir kreatif siswa sekolah dasar dalam pembelajaran berbasis RADEC. *Jurnal Basicedu*, *7*(1), 872–879.

Nuryani, P., Abidin, Y., & Herlambang, Y. T. (2019). Model pedagogik multiliterasi dalam mengembangkan keterampilan berpikir abad ke-21. *EduHumaniora | Jurnal Pendidikan Dasar Kampus Cibiru*, *11*(2), 117–126.

Pande, M., & Bharathi, S. V. (2020). Theoretical foundations of design thinking – A constructivism learning approach to design thinking. *Thinking Skills and Creativity*, *36*, 100637.

Rago, J., & Gibson, R. (2021). How visual arts can promote perseverance, confidence and creative risk-taking in young students. australian art education, 42(1), 50-69.

Saleem, S., Burns, S., & Perlman, M. (2024). Cultivating young minds: Exploring the relationship between child socio-emotional competence, early childhood education and care quality, creativity and self-directed learning. *Learning and Individual Differences*, *111*, 102440.

Sariaman, S., Sabri, T., & Sapriati, A. (2021). Pembelajaran tematik terpadu berbasis pengembangan berpikir kritis dan berpikir kreatif pada siswa kelas V sekolah dasar. *EduHumaniora | Jurnal Pendidikan Dasar Kampus Cibiru*, *13*(2), 124–133.

Satria, E., & Sopandi, W. (2019). Applying RADEC model in science learning to promoting students' critical thinking in elementary school. *Journal of Physics: Conference Series*, *1321*(3).

Setiawan, D., Hartati, T., & Sopandi, W. (2020). Effectiveness of critical multiliteration model with radec model on the ability of writing explanatory text. *EduHumaniora | Jurnal Pendidikan Dasar Kampus Cibiru*, *12*(1), 1–14. https://doi.org/10.17509/eh.v12i1.17445.

Setiawan, D., Sopandi, W., & Hartati, T. (2019). Kemampuan menulis teks eksplanasi dan penguasaan konsep siswa sekolah dasar melalui implementasi model pembelajaran RADEC. *Premiere Educandum : Jurnal Pendidikan Dasar Dan Pembelajaran*, *9*(2), 130. https://doi.org/10.25273/pe.v9i2.4922.

Soare, E. (2015). Using the Complex learning situation model in the evaluation of competences. *Procedia - Social and Behavioral Sciences*, *180*, 1–6.

Sopandi, W. (2017a). The quality improvement of learning processes and achievements through the read-answer-discuss-explain-and create learning model implementation. *In*

Proceeding 8th Pedagogy International Seminar, *8*(September), 132–139.

Sopandi, W. (2017b). The quality improvement of learning processes and achievements through the read-answer-discuss-explain-and create learning model implementation. *Proceeding 8th Pedagogy International Seminar 2017: Enhancement of Pedagogy in Cultural Diversity Toward Excellence in Education*, *8*(229), 132–139.

Stolz, R. C., Blackmon, A. T., Engerman, K., Tonge, L., & McKayle, C. A. (2022). Poised for creativity: Benefits of exposing undergraduate students to creative problem-solving to moderate change in creative self-efficacy and academic achievement. *Journal of Creativity*, *32*(2), 100024.

Tromp, C., & Baer, J. (2022). Creativity from constraints: Theory and applications to education. *Thinking Skills and Creativity*, *46*, 101184.

Van Hooijdonk, M., Mainhard, T., Kroesbergen, E. H., & Van Tartwijk, J. (2024). Can elementary school teachers assess students' creative problem solving abilities? *Teaching and Teacher Education*, *146*, 104644.

Willemsen, R. H., de Vink, I. C., Kroesbergen, E. H., & Lazonder, A. W. (2023). The role of creative thinking in children's scientific reasoning. *Thinking Skills and Creativity*, *49*, 101375.

Yang, X., Zhang, M., Zhao, Y., Wang, Q., & Hong, J.-C. (2022). Relationship between creative thinking and experimental design thinking in science education: Independent or related. *Thinking Skills and Creativity*, *46*, 101183.

Yulianti, Y., Lestari, H., Rahmawati, I., Agama, I., & Sahid, I. (2022). Penerapan model pembelajaran radec terhadap peningkatan kemampuan berpikir kritis siswa. *Jurnal Cakrawala Pendas*, *8*(1), 47–56.

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